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EXAMINER

LEUNG, JENNIFER A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 02/21/2003

67

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/379,481

Applicant(s)

BENJE, MICHAEL

Examiner

Jennifer A. Leung

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 20 November 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on November 20, 2002 has been received and carefully considered. The changes submitted to the Specification and Drawings are acceptable. Claims 1-12 remain active.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, "fine" is a relative term and is therefore considered vague and indefinite. See also all subsequent claims. Furthermore, "reaction gas mixture" lacks proper positive antecedent basis (line 5). Also, it is unclear as to the structural relationship of "a dome" to the other structural elements of the process.

With respect to claim 2, "the main stream" (lines 3-4) lacks proper positive antecedent basis. Furthermore, it is unclear as to the structural relationship of "a part-stream" and "a bypass stream" to the other structural elements of the process. Furthermore, it is unclear as to the process limitation the applicants are attempting to recite by, "a part stream in the form of a bypass stream."

With respect to claim 3, "the main stream", "the bypass stream", and "separate dome spaces" lack proper positive antecedent basis.

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With respect to claim 4, "the bypass stream" (line 3) lacks proper positive antecedent basis. Furthermore, it is unclear as to how "a catalyst" is related to the other elements of the process.

With respect to claims 5-9 and 12, the recitation of "A fluidized-bed reactor... said reactor comprising;" and "A fluidized bed-reactor..." in the preamble is incomplete and non-functional, since the claims lack the recitation of an element for performing the specific function of the fluidized bed reactor, and the scope of the claims is generally directed towards a filtration system comprising filter cartridges for a fluidized-bed reactor. It is unclear as to whether the applicants are attempting to claim both a fluidized-reactor and a filtration system. Furthermore, "the fluidized bed" (line 6) lacks proper positive antecedent basis. Also, it is unclear as to the structural relationship of "a dome" (line 5) to the other elements of the apparatus. Furthermore, it is unclear as to the structural limitation the applicants are attempting to recite by, "the filter cartridges are dipable", since whether or not the filter cartridges are capable of being "dipped" does not constitute a positive structural limitation.

With respect to claim 6, "the dome space" (lines 1-2) and "the quench" (line 3) lack proper positive antecedent basis. Furthermore, it is unclear as to the structural relationship of "the quench" to the other elements of the apparatus. Furthermore, it is unclear as to what structural limitation the applicant is attempting to recite by "each having an outlet for a main stream to the quench and a bypass stream", and where it is disclosed in the specification and drawings.

With respect to claim 7, "the filter elements" (lines 1-2), "the fine dust filter cartridges" (lines 2-3) and "fine dust fractions" (line 3) lack proper positive antecedent basis. Furthermore,

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it is unclear as to the relationship of "the fine dust filter cartridges" to the "filter cartridges" set forth in claim 5, line 4.

With respect to claim 8, it is unclear as to how the "filter elements allowing through fine dust" and "filter cartridges retaining the fine dust" are related to the "filter cartridges" set forth in claim 5. Furthermore, "filter elements" (line 3), and "fine dust" (lines 2, 3) lack positive antecedent basis.

With respect to claim 10, it is unclear as to the relationship of "the oxychlorination of ethylene" to "A process for removing fine dust from a fluidized-bed reactor..." set forth in the claims. Furthermore, "primarily" is considered vague and indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 5 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Degnen et al. (U.S. 2,548,875).

Degnen et al. teach an apparatus comprising: at least one base plate **9** having filter cartridges **8** in a dome of the reactor **1**, wherein the filter cartridges **8** are dippable (column 5, lines 44-51) into the upper region (FIG. 1) of the fluidized bed **4**.

Instant claim 5 structurally reads structurally on the apparatus of Degnen et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al. (U.S. 2,548,875) in view of Raterman (U.S. 5,198,397).

Degnen teaches a process for removing fine dust from the fluidized bed reactor, said process comprising the steps of passing the gas stream upwardly through the fluidized bed **4**, into filter cartridges **8**, and out of the vessel **1** via the vessel dome and through line **3** (column 5, lines 70-4), which reads on "removing the fine dust inside a reactor via filter cartridges". Degnen et al. further discuss the prior art step of "scrubbing the exit gas stream with liquids..." (inherently a "quench" of the gas stream; column 3, lines 20-22) in order to separate solids that may be present in the exit gas stream, but is silent as to whether such quench may be incorporated in the currently disclosed method. Raterman teaches passing a reaction gas mixture to a quench **225** from a dome of the reactor (Fig. 2). It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a quench step to the reaction gas mixture exiting from the dome of the reactor in the apparatus of Degnen et al., since providing a quench

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is conventionally known in the art, as evidenced by Degnen et al., and furthermore, providing a quench to the exiting gas stream prevents dangerous temperature excursions for the gas stream if afterburning should occur (column 11, lines 15-20), as taught by Raterman.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al. (U.S. 2,548,875) in view of Raterman (U.S. 5,198,397), as applied to claim 1 above, and further in view of Cheng (U.S. 4,306,888) and Smith (U.S. 5,314,616).

The collective teaching of Degnen and Raterman are silent as to removing a bypass stream from the reactor in addition to a main stream. Cheng teaches a process where a main stream **64** and a bypass stream **56, 58** are removed from separate dome spaces **46, 48**. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the process of removing a main stream and a bypass stream from separate dome spaces of Cheng to the process of Degnen because by removing the streams from separate dome spaces, one stream and its corresponding filter can be closed off for cleaning while the other stream and its corresponding filter remains open, so that at least one filter is in operation at all times, as taught by Cheng (column 4, lines 61-67).

The collective teachings of Degnen, Raterman, and Cheng are silent as to the bypass stream having a predetermined fine dust fraction below a predetermined particle size. Smith teaches a process removing a part-stream from a filter system, where the part-stream in the form of a bypass stream filters smaller particle sizes than the main stream (Abstract). It would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to provide the process of forming a bypass stream of Smith to the modified process of Degnen in order to filter out a larger range of contaminant particle sizes, as taught by Smith.

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6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al. (U.S. 2,548,875) in view of Raterman (U.S. 5,198,397), as applied to claim 1 above, and further in view of Cheng (U.S. 4,306,888).

The collective teachings of Degnen et al. and Raterman are silent as to a process where a main stream and a bypass stream are removed from separate dome spaces of the reactor. Cheng teaches a process where a main stream **64** and a bypass stream **56, 58** are removed from separate dome spaces **46, 48**. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the process of removing a main stream and a bypass stream from separate dome spaces of Cheng to the process of Degnen because by removing the streams from separate dome spaces, one stream and its corresponding filter can be closed off for cleaning while the other stream and its corresponding filter remains open, so that at least one filter is in operation at all times, as taught by Cheng (column 4, lines 61-67).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al. (U.S. 2,548,875) in view of Raterman (U.S. 5,198,397), as applied to claim 1 above, and further in view of Daw et al. (U.S. 5,435,972).

The collective teachings of Degnen and Raterman are silent as to the process further comprising a step of analyzing a catalyst sample and/or a change in the heat transfer and/or a deterioration of the fluidization behavior and switching on or off the bypass stream according to the analysis. Daw et al. teach a method of analyzing the deterioration of the fluidization behavior and using a controller **38** to adjust process conditions via control of a valve based on the analysis (column 4, lines 34-37). It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the analysis and control step of Daw to the

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modified process of Degnen et al., such that the fluidization behavior was analyzed and a control valve, for instance the bypass valve, was controlled in response to the analysis, because analyzing and controlling process conditions of a fluidized bed help maintain desired operating conditions, thereby improving reaction yield, as taught by Daw et al.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al. (U.S. 2,548,875) in view of Raterman (U.S. 5,198,397) and Cheng (U.S. 4,306,888).

The same comments with respect to Degnen et al. and Raterman apply (see comments made with respect to claim 1 above). Degnen et al. further disclose that the base plate **9** carries the filter cartridges **8** on its lower surface (Figure 1). However, the collective teachings of Degnen et al. and Raterman are silent as to the dome space being divided into at least two chambers, each having an outlet for a main stream and a bypass stream. Cheng teaches an apparatus where the dome space is divided by partition **44**, above the plate **34** carrying the filter cartridges, into at least two chambers **46**, **48**, each having an outlet for a main stream **64** and a bypass stream **56**, **58**. It would have been obvious to one of ordinary skill in the art at the time the invention was made to divide the dome space via a partition in the modified apparatus of Degnen in order to provide separate dome spaces and outlets for a main stream and bypass stream to each space because the separate chambers allows one stream and its corresponding filter can be closed off for cleaning while the other stream and its corresponding filter remains open, so that at least one filter is in operation at all times, as taught by Cheng (column 4, lines 61-67).

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9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al. (U.S. 2,548,875) in view of Raterman (U.S. 5,198,397) and Cheng (U.S. 4,306,888), as applied to claims 5 and 6 above, and further in view of Smith (U.S. 5,314,616).

Degnen further discloses that the porous membrane of the filters may be provided by a plurality of vertical cylinders in order to obtain a desired porosity (column 5, lines 43-48). However, the collective teachings of Degnen, Raterman, and Cheng are silent as to whether the filter elements coordinated with the bypass stream chamber have a pore size differing from that of the filter cartridges of the main stream chamber, for the controlled passage of fine dust fractions. Smith teaches a fluid filter system comprising a main filter and an auxiliary bypass filter, where the auxiliary filter is adapted to filter smaller particle sizes (column 2, lines 27-36) and the main filter is adapted to filter and retain larger particles (Abstract). Provisions are also made for controlling the fluid flow through the auxiliary filter depending on predetermined conditions (column 2, lines 45-47). It would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to control the passage of particles in the bypass stream versus the main stream by adjusting the pore size of the filter cartridges of the modified apparatus of Degnen et al., because the different pore sizes for bypass versus main stream allow filtering of smaller particles in the bypass while maintaining adequate fluid flow in the larger particle filtering main stream, as taught by Smith.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al. (U.S. 2,548,875) in view of Smith (U.S. 5,314,616).

The same comments with respect to Degnen and Smith apply. Degnen further discloses that the filters may be employed in whatever number and size necessary to provide the required

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filter surface and may be mounted in the contact chamber in any suitable manner (column 5, lines 51-55). However, Degnen is silent as to a ratio of filter elements allowing through fine dust to filter cartridges retaining the fine dust of 1:9. In any event, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to maintain the ratio of filter elements allowing through fine dust to filter cartridges retaining the fine dust at approximately 1:9, on the basis of suitability for the intended use and absent showing any unexpected results, since it has been held that changes in proportions are obvious, *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Reese* 129 USPQ 402 (CCPA 1961), and where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, *In re Aller*, 105 USPQ 233.

11. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al (U.S. 2,548,875) in view of Shah (U.S. 4,328,353).

With respect to claim 9, Degnen et al. further disclose that the apparatus may comprise a reduced necessity for a cleaning means, such as a conventionally known method of clearing the filter cartridges of solid by a reverse flow of gas (column 3, lines 27-30; column 4, lines 9-12). Shah further evidence the conventionality of providing a cleaning means for filtration apparatus by teaching a cleaning means using compressed gas in reverse flow, pulsed on the baseplate 32 in order to periodically remove solids on the filter surface (column 3, lines 26-34; column 6, lines 21-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the cleaning means to the apparatus of Degnen, since the use of a cleaning means for filtration apparatus is conventionally known, as disclosed by Degnen.

and furthermore, the cleaning means removes the finely divided solids that plug the filter surface, as taught by Shah.

With respect to claim 12, Degnen et al. further discloses the use of porous metal filters (column 5, lines 54-56) for the filter cartridges. Although Degnen et al. are silent as to whether the porous metal may comprise specifically "sintered metal", it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to select sintered metal for the porous metal filter cartridges in the apparatus of Degen et al., on the basis of suitability for the intended use and absent showing any unexpected results, since the use of sintered metal as filter cartridges is conventionally known in the art, as evidenced by Shah. In particular, Shah teaches the use of sintered metal filter cartridges **14, 31** to remove a powder contained in a gaseous product (column 4, lines 45-54). In any event, substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al. (U.S. 2,548,875) in view of Raterman (U.S. 5,198,397), as applied to claim 1 above, and further in view of Tsao (U.S. 4,243,650).

With respect to claim 10, Degnen et al. further disclose that the process is "equally applicable to any operation in which any finely divided solid is contacted with any gas under conditions which maintain the finely divided solid in a dense fluidized pseudo-liquid condition," and furthermore, "the invention is applicable to the separation of gases and vapors from fine divided solids suspended therein, regardless of the previous condition or relation of the gases and

solids." (column 4, lines 17-35; column 1, lines 23-37). Therefore, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to primarily use the modified process for removing fine dust from a fluidized bed reactor of Degnen for the oxychlorination of ethylene. To illustrate the applicability of the modified process of Degnen to the oxychlorination of ethylene, Tsao discloses that such process produces solid salt particles in the effluent of a fluidized bed reactor that require a particle removal and recovery process, such as filtration (column 1, lines 25-35; column 3, lines 42-46; column 5, lines 50-61).

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Degnen et al (U.S. 2,548,875) in view of Raterman (U.S. 5,198,397) and Tsao (U.S. 4,243,650), as applied to claims 1 and 10 above, and further in view of Shah (U.S. 4,328,353).

With respect to claim 11, Degnen et al. further discloses the use of porous metal filters (column 5, lines 54-56) for the filter cartridges. Although Degnen et al. are silent as to whether the porous metal may comprise specifically "sintered metal", it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to select sintered metal for the porous metal filter cartridges in the method of Degen et al., on the basis of suitability for the intended use and absent showing any unexpected results, since the use of sintered metal as filter cartridges is conventionally known in the art, as evidenced by Shah. In particular, Shah teaches the use of sintered metal filter cartridges **14, 31** to remove a powder contained in a gaseous product (column 4, lines 45-54). In any event, substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

Response to Arguments

14. Applicant's arguments filed November 20, 2002 have been fully considered but they are not persuasive.

15. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

With respect to claim 5, the Degnen reference comprises substantially the structural elements as claimed, and therefore applicant's arguments are not commensurate with the language of the claims. Furthermore, Applicants argue, "Degnen... does not disclose, teach or otherwise suggest the method described above for regulating the fine dust content in the fluidized bed." (page 5, last paragraph to top of page 6). However, please note that the method limitations are recited in claim 1 (rejected over Degnen et al. in view of Raterman), and the Degnen et al. reference is merely provided in the rejection of the apparatus, present in claim 5. In any event, the Degnen et al. reference indeed teaches a method for separating gases and vapors from finely divided solids in a fluidized bed process (column 3, line 73-column 4, line 17; claims), and the Raterman reference is merely provided to further illustrate the conventionality of providing a quench to the apparatus and process of Degnen et al. Furthermore, with regards to the comment, "A particular feature is that the filter elements dip into the fluidized bed to remove the resulting filter cake by the fluidization movement of the fluidized bed without cleaning," (page 5, last paragraph), Degnen further indicates that cleaning may still be provided, i.e. "eliminates or reduces the necessity for reverse flow of gas..." (column 4, lines 9-16).

16. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding the Raterman '937 reference, applicants argue that the reference "does not disclose, teach or otherwise suggest the same method as described and claimed in the present application. Raterman rather describes an arrangement of cyclones in a fluidized-bed reactor which retain catalyst particles and allow through fine dust particles." (page 6, paragraph 2). However, in view of the current rejections, the Raterman reference is merely provided to teach the concept of providing a quench to modify the apparatus and method of Degnen et al. There is no reason why one of ordinary skill in the art at the time the invention was made would not be motivated to combine these two references in order to obtain the limitations as instantly claimed.

Regarding the Cheng '888 reference, applicants argue that the reference comprises filters that "do not vary in fineness as described in the present invention," and "does not disclose, teach or otherwise suggest the controlled exclusion of fine dust", or "even relate to the use in fluidized bed reactors" (page 6, paragraph 3). However, in view of the current rejections, the Cheng reference is merely provided to teach the concept of placing a partition plate in the dome space of a vessel such that a main stream and a bypass stream may be withdrawn, in order to modify the apparatus and method of Degnen et al. Rather, the Smith reference is provided to teach the concept of filtration using filters of varied fineness.

Regarding the Smith reference, applicants state that they "were unable to discern what this reference has to do with the control of the amount of fine dust in the fluidized bed reactor."

(page 6, paragraph 4). Again, the purpose of the Smith reference is merely to teach the concept of filtration using filters of varied fineness, as evidenced by "where the auxiliary filter is adapted to filter smaller particle sizes (column 2, lines 27-36) and the main filter is adapted to filter and retain larger particles (Abstract)," in order to modify the apparatus and method of Degnen et al.

Regarding the Daw '972 reference, applicants argue that the reference "does not disclose, teach, or otherwise suggest the present application for establishing the fluidized bed compositions" and that the apparatus instead "acts on the amount of fluidizing gas," (page 6, last paragraph). However, the Daw reference is merely provided to teach the concept of analyzing the fluidization behavior and establishing process controls (i.e. opening and closing a valve) for controlling a reaction, in order to modify the apparatus and method of Degnen et al. Although the reference indicates that the amount of fluidizing gas is adjusted, one of ordinary skill in the art at the time the invention was made could have just as easily adjusted the reactant or product flow through a different valved process stream, such as a bypass stream.

Regarding the Shah '353 reference, applicants argue that the reference "has nothing in common with the method described in the present application," (page 7, paragraph 1). However, the Shah reference is merely provided to illustrate the conventionality of using sintered metal filter cartridges for filtration of particulates in a gas stream. Furthermore, the sintered metal filter cartridges are substantially "porous metal filters", as disclosed by Degnen et al. Therefore, there is no reason why one of ordinary skill in the art at the time the invention was made would not be motivated to make this substitution, on the basis of suitability for the intended use and absent showing any unexpected results, since substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169

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USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

Regarding the Tsao '650 reference, applicants argue that the reference "does not disclose, teach or otherwise suggest the invention disclosed and claimed herein." (page 7, paragraph 2). However, the Tsao reference is merely provided to illustrate the applicability of the modified apparatus and method of Degnen et al. to the oxychlorination of ethylene.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a):

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

* * *

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is 703-305-4951. The examiner can normally be reached on 8:30 am - 5:30 pm M-F, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jennifer A. Leung JAL
February 17, 2003

HIEN TRAN
PRIMARY EXAMINER